

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-482/85-31

Operating License: NPF-32

Docket: 50-482

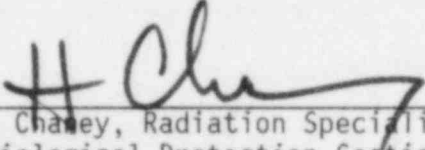
Licensee: Kansas Gas and Electric Company (KG&E)
P. O. Box 208
Wichita, Kansas 67201

Facility Name: Wolf Creek Generating Station (WCGS)

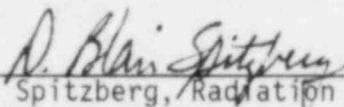
Inspection At: WCGS Site in Coffey County, Kansas

Inspection Conducted: July 15-19, 1985

Inspectors:

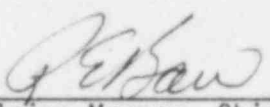

H. D. Chamey, Radiation Specialist, Facilities
Radiological Protection Section

8/19/85
Date

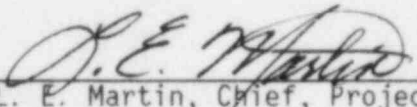

D. B. Spitzberg, Radiation Specialist, Facilities
Radiological Protection Section

8/19/85
Date

Approved:


Blaine Murray, Chief, Facilities Radiological
Protection Section

8/19/85
Date


L. E. Martin, Chief, Project Section A
Reactor Project Branch 2

8/20/85
Date

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Inspection Summary

Inspection Conducted July 15-19, 1985 (Report STN 50-482/85-31)

Areas Inspected: Routine, unannounced inspection of the licensee's radiation protection (RP) program including: organization and management controls, staff training and qualifications, ALARA program, and reactor shielding radiation surveys during reactor power ascension testing. During the inspection an allegation regarding an unreported personnel overexposure was inspected. The inspection involved 80 inspector-hours onsite by 2 NRC inspectors.

Results: Within the 4 areas inspected, no violations or deviations were identified. The allegation was not substantiated.

DETAILS

1. Persons Contacted

KG&E

- *G. Koester, Vice President Nuclear
- *C. Mason, Director of Nuclear Operations
- *G. Boyer, Superintendent, Technical Support (STS)
- *M. Nichols, Site Health Physicist (SHP)
- *C. Brown, ALARA Coordinator
- D. Erbe, Lieutenant of the Guard
- *A. Freitag, WCGS Manager, Nuclear Power Engineering
- *R. Hoyt, Emergency Planning Administrator
- *J. Ives, Supervisor, Health Physics (HP)
- B. Ketchum, Technical Staff Engineer, Corporate
- *W. Lindsay, Supervisor, Quality Systems
- *C. Patrick, Superintendent, Quality Evaluations
- *K. Petersen, Licensing Engineer
- G. Swartzendruber, Manager, Radiological Services, Corporate
- R. Wollum, Instrument and Controls (I&C) Coordinator

Others

- *J. Cummins, NRC Senior Resident Inspector
- W. Allen, Health Physics Consultant
- G. Bramlett, I&C Consultant
- *R. Flannigan, Site Representative, Kansas City Power and Light
- *E. Krucenski, Quality Assurance Engineer, Bechtel
- P. Nastick, Licensing Engineer, Bechtel

*Denotes those present during the exit interview.

The NRC inspectors also contacted other WCGS personnel including operations, administrative, contractor, and health physics personnel.

2. RP Organization and Management Controls

The NRC inspectors reviewed the licensee's organization and management controls for conduct of the WCGS radiation protection program to determine compliance with the requirements of the facility Technical Specifications (TS) NUREG-1104, and commitments contained in the Final Safety Analysis Report (FSAR).

The NRC inspectors reviewed the RP organization's operating procedures, organizational interfaces (regarding RP and ALARA activity), level of staffing, and audits/surveillances of RP activities. The licensee was found to have a well structured and staffed RP group at both the KG&E

offices in Wichita, Kansas and at the WCGS site. The onsite RP organization agreed with Figure 6.2-2 (organization chart) of the TS. The NRC inspectors reviewed the management policies (RP, respiratory protection, and ALARA), QA audits (TE 50140-K052), QA surveillances, position description/responsibilities assignment (Administrative Procedures (ADM) 01-009, 03-007, 03-002, 03-050), deficiency identification system (ADM 03-006), shift logs, RP group reading files, and observed RP group supervisor tours and work activity reviews. The NRC inspectors noted a strong corporate involvement in the support of onsite RP activities, especially in the area of ALARA. The licensee's audits and reviews (RP Plan Section 13.3 and QA procedure (QAP) W18.6) were found to be thorough, and deficiencies were being resolved in a timely manner.

The licensee's compliment of onsite RP personnel included the following:

- Approximately 40 RP technicians (20 satisfy TS requirements for fully qualified RP technicians).
- 6 supervisors (including the SHP)
- 8 utility helpers
- 4 clerks

The licensee is utilizing approximately 17 contracted RP technicians at this time. The NRC inspectors discussed with licensee representatives the increased work load that would be expected by the ALARA coordinator as the plant advances to commercial operation.

The SHP was found to have recourse to the plant manager for items of immediate technical concern, and the RP staff had and was aware of their authority to stop work that was not being conducted in a radiologically safe manner.

The licensee's RP program implementing procedures were found to be in accordance with station TS (Section 6.8, and 6.11) and administrative instructions (ADM 07-101, 03-001).

No violations or deviations were identified.

3. Staff Training and Qualifications

The NRC inspectors reviewed the licensee's training and qualifications of RP personnel and radiological workers to determine compliance with TS Section 6.4, and 10 CFR Part 19.12 requirements, and the commitments of the FSAR.

The NRC inspectors observed general employee (GET), radiation worker, (RWT), and special radiation worker training activities including class participation, handouts, suitability of facilities, and evaluation of training. The licensee's GET and RWT training appear to satisfy the commitments of the FSAR (Section 13), the recommendations of industry standard ANSI 3.1-1978, NRC Regulatory Guides 8.13, and 8.27, and the requirements of the TS and 10 CFR Part 19.12.

The NRC inspector reviewed employee resumes position descriptions (ADM 03-007), RP group training records, lesson plans, qualification matrixes for the RP group, and training implementing procedures (ADM 03-800). The licensee was found to be revising all RP group training programs to the guidance provided by the Institute of Nuclear Power Operations (INPO) for accreditation of their training program. The NRC inspectors discussed with the licensee the apparent need to increase the current two man staff that is responsible for both development and implementation of the new training program later this year. The licensee indicated that increased staffing had been addressed in the 1986/1987 budget for the RP group. The NRC inspectors noted that the Nuclear Training Department was providing assistance to the RP group in developing the specific task analysis and training objectives for the RP group.

The NRC inspectors determined that personnel qualifications and assignments in the RP group satisfied the commitments made by the licensee to the NRC and addressed in NRC Inspection Reports 50-482/84-34 and 84-54, and the requirements of the TS regarding staff qualifications.

The NRC inspectors also reviewed QA assurance audits and surveillances of RP staff, training, and qualifications, and found the audits to be comprehensive. The licensee's review and evaluation of contractor technicians (HPH 08-003) was found to also be comprehensive, involving knowledge testing and practical demonstrations of abilities.

No violations or deviations were identified.

4. ALARA Program

The NRC inspectors reviewed the licensee's ALARA program for compliance with the requirements of 10 CFR Part 20, licensee commitments in the FSAR (Section 12), and the recommendations contained in NRC Regulatory Guides 8.8 and 8.10.

The NRC inspector reviewed the licensee's ALARA program organization (on and offsite), staffing, assignment of responsibilities (RP Plan, ADM 01-006, 01-009, and 03-007), management ALARA policies (contained in the RP Plan), implementing procedures (ADM 01-026, 01-027, 03-050, 03-101 and HPH 07-001 for onsite activities, and draft ALARA committee charter for the conduction of KG&E ALARA committee activities), staffing, and ALARA goals for operation of WCGS during the remainder of 1985. The NRC inspectors also

reviewed the program for assuring that facility design changes are provided appropriate ALARA reviews. The NRC inspectors discussed with licensee representatives (corporate and site) the apparent lack of a full dialogue between the RP group and the onsite nuclear engineering group concerning resolution of plant modifications submitted as ALARA concerns. The NRC inspectors noted that several plant modification requests, submitted via the ALARA problem report program (ADM 03-050), were rejected by the onsite nuclear engineering group, after receiving proper evaluations involving both engineering and scheduling considerations.

The responsibility for conducting the ALARA program at WCGS is assigned to the ALARA coordinator in the RP group (ADM 03-007). The NRC inspectors accompanied and observed the ALARA coordinator in performance of his duties, which at the time of this inspection did not involve a significant amount of RWP review due to the low radiation dose rates associated with low power testing. The NRC inspectors noted that even though there are ALARA planners assigned within each major maintenance group (I&C, mechanical, etc) these persons were not being fully utilized to set up work operations for the ALARA coordinators final review, which places more demands on the ALARA coordinators time. Licensee representatives indicated that as the plant moves toward commercial operation, the staffing and resources of the ALARA coordinator will need to be improved.

The licensee's ALARA committee is a combination of corporate upper management (radiological support, engineering, vice president nuclear operations), and the WCGS SHP and the ALARA coordinator. Several ALARA committee meeting reports were reviewed.

The NRC inspectors reviewed the ALARA reviews concerning engineering design changes that affected radiological conditions/systems. Long lead time design changes are coordinated through the Wichita, Kansas home office with the corporate engineering group and radiological assessment group providing required ALARA reviews per home office instructions (KP-RP 200, KI-RP 201.5). Those design changes that are generated by the onsite nuclear engineers or by the lead architect engineer (Bechtel) and require expedient implementation are provided an ALARA review by the Bechtel engineers using their ALARA review procedure (EDPI 3.16(B)-30). The licensee's and Bechtel's engineering supervisors were interviewed and found to possess suitable experience and knowledge of ALARA concepts.

The licensee had established radiation exposure and solid waste ALARA goal for the remainder of 1985 of 171 man-rem, and 9,636 cubic-feet of disposable solid waste respectively.

No violations or deviations were identified.

5. Reactor Startup Shielding Radiation Surveys

The NRC inspectors reviewed the licensee's conduct of reactor shielding radiation surveys during reactor power ascension tests for compliance with the RP requirements of the TSs and 10 CFR 20, and the commitments of the FSAR.

The NRC inspectors reviewed the licensee's results of the radiation surveys conducted per reactor startup test SU 7-0016. The licensee had performed both neutron and gamma radiation dose rate surveys inside of the reactor containment and in areas adjacent to the containment. Surveys were conducted prior to initial criticality and at reactor power levels of approximately 3 and 50 percent. During these test plateaus the licensee had a contractor perform neutron energy spectrum studies for use in the WCGS dosimetry program. The licensee's survey results did not show any shielding deficiencies. These surveys satisfied the FSAR commitments, and the recommendations of NRC RG 1.68 and ANSI 6.3.1-1980. The licensee is scheduled to complete 100 percent power plateau surveys by mid August 1985.

No violations or deviations were identified.

6. Licensee Event Report Followup

The NRC inspectors reviewed the licensee's actions to resolve the many spurious "spikes" in the control room intake ventilation radiation monitor (GK-RE-04) which caused actuation of a Control Room Ventilation Isolation Signal (CRVIS).

The licensee determined that the General Atomics particulate, iodine and gaseous airborne activity monitor(s) had a mismatch between the software and hardware in units microprocessor that resulted in a 100 times actual radiation detector signal being generated on the gaseous channel. A previous engineering evaluation based on similar problems at the Callaway Plant (SNUPPS) concluded that a hardware modification was needed from the vendor (General Atomics). The licensee has performed vendor directed modifications to the GE-RE-04 unit microprocessor and to date has not experienced any further problems. These modifications will be also performed on 14 other similar units at the WCGS.

No violations or deviations were identified.

7. Onsite Allegation Followup

The NRC inspectors reviewed an alleged 6 Rem exposure (whole body or extremity exposure was not ascertained) to an individual at WCGS as reported telephonically to the NRC Regional office. The purported over-exposure was alleged to have been incurred on July 7, 1985, inside the reactor containment building (CMT) during work on a leaking/broken pipe.

The NRC inspectors determined the following facts by review of documents and interviews with licensee personnel.

- The containment hatch is chain locked with keys only in the possession of security, health physics, and the shift supervisor. A non-interlocking key card device registers entries made into containment. Security procedures require security personnel to be present for routine access to the containment building. The containment hatch airlock also alarms at central security upon each opening. Reviews of printouts of key card access entries to the containment, and containment hatch alarms showed that there were no entries into containment from 4:09 p.m., on July 6, 1985, to 4:56 a.m., on July 8, 1985.
- Records for the period July 6-8, 1985, of all six active and inactive RWPs that could have encompassed containment entries were inspected. None of the six RWPs had sign-in entries made on July 7, 1985. Of these RWPs logged on July 6 or 8, the work involved either containment surveys or hatch maintenance.
- Results of personnel monitoring were reviewed and the highest individual exposures recorded to date were less than 200 mrem. There had also been no elevated personal ionization chamber results recorded.

Based on the above findings, the allegation was not substantiated. Interviews and records indicated that any work situation involving pipe repair which had existed at WCGS did not provide a source sufficient for such an exposure.

No violations or deviations were identified.

8. Exit Interview

The NRC inspectors met with the licensee's representatives denoted in paragraph 1, and the NRC resident inspector at the conclusion of the inspection on July 9, 1985. The NRC inspectors discussed the scope and findings of the inspection, excluding the allegation investigation. The licensee's representatives expressed an interest in pursuing the staffing needs in the onsite ALARA program with the inspectors.